

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

CISCO SYSTEMS, INC.,

Plaintiff,

v.

CAPELLA PHOTONICS, INC.,

Defendant.

Case No. [20-cv-01858-EMC](#)

CLAIM CONSTRUCTION ORDER

I. INTRODUCTION

This case involves two patents that Defendant and Counter-Plaintiff Capella Photonics, Inc. (“Capella”) accuses Plaintiff and Counter-Defendant Cisco Systems, Inc. (“Cisco”) of infringing. On April 8, 2021, the parties appeared before the Court for a claim construction hearing. Pursuant to Patent Local Rules 4-1 and 4-2, the parties have asked the Court to construe eleven (11) terms that appear in various claims of the patents-in-suit. *See* Docket No. 83 (“Joint Claim Construction Statement”), Appendix A. The Court adopts the following constructions.

II. BACKGROUND

A. Factual Background

Capella alleges that Cisco’s reconfigurable optical add drop multiplexer (“ROADM”) products, including the ONS 15454 MSTP, NCS 2000, and ONS 15200 products, infringe two of Capella’s patents: U.S. Patent Nos. RE 47, 905 (the “905 Patent”) and RE 47,906 (the “906 Patent”).

As described in Cisco’s motion for judgment on the pleadings:

The Capella patents describe a purported invention in the field of

optical communication. In particular, they describe a purportedly improved “optical add-drop multiplexer.” An “optical add-drop multiplexer” is a component in a fiber-optic network that 1) receives light signals transmitted over optical fibers over different wavelength “channels,” 2) removes (“drops”) and inserts (“adds”) light signals on selected channels while letting the signals on other channels “pass through,” and 3) transmits the add and pass-through channels to the next destination.

Docket No. 35 (“MJOP”) at 2–3 (citations omitted). Cisco adds that, “[l]ike the prior art devices, the purportedly novel optical add-drop multiplexers of the Capella patents included ports, a wavelength separator, a beam focuser, and an array of micromirrors.” *Id.* at 3. Cisco represents that, in the patents, Capella asserts that its optical add-drop multiplexers are distinguished over the prior art on the grounds that (1) the pivoting angle of the micromirrors could be continuously adjusted, (2) the micromirrors could pivot on two axes, instead of only one, and (3) the multiplexer included a “servo-control assembly.” *Id.* (quoting ’905 Patent at 4:19–5:1).

B. Prior Litigation and Patent Prosecution

This is the second lawsuit between the parties. In 2014, Capella alleged that Cisco infringed two of its patents: Patent No. RE 42,368 (the “’368 Patent”) and Patent No. RE 42,678 (the “’678 Patent”). *See Capella Photonics, Inc. v. Cisco Sys., Inc.*, No. 3:14-cv-03348-EMC (N.D. Cal. filed Feb. 12, 2014). Cisco instituted *inter partes* review challenging claims of the ’368 Patent and the ’678 Patent. *See* Docket No. 1 (“Compl.”) ¶¶ 16, 31.

As to the ’368 Patent, “the Patent Trial and Appeal Board [PTAB] issued a final written decision cancelling claims 1-6, 9-13, and 15-22 [as obvious over the prior art].” *Id.* ¶ 16; *see also* Docket No. 106-2 (“’368 IPR Order”). The cancellation was affirmed by the Federal Circuit. Subsequently, Capella pursued reissue proceedings for the ’368 Patent and the ’905 Patent was issued on March 17, 2020. Docket No. 26 (“FAC”) ¶¶ 17–19. Cisco contends that “[d]uring the course of reissue proceedings, Capella represented that claims of the ’905 Patent have the same scope as claims of the ’368 Patent that Capella accused Cisco of infringing in the Prior Litigation.” *Id.* ¶ 4.

As to the ’678 Patent, it was also placed into *inter partes* review, and the PTAB cancelled claims 1-4, 9, 10, 13, 17, 19-23, 27, 29, 44-46, 53, and 61-65 as obvious over the prior art. *Id.* ¶ 6; *see also* Docket No. 106-4 (“’678 IPR Order”). The cancellation was also affirmed by the Federal

Circuit. FAC ¶ 6. Subsequently, Capella pursued reissue proceedings for the '678 Patent and the '906 Patent was issued on March 17, 2020 (the same day that the '905 Patent issued). *Id.* ¶ 33–34.

C. Procedural History

Cisco filed the instant action against Capella on March 16, 2020, seeking a declaration that Cisco's products do not infringe the '905 and '906 Patents. *See* Compl. Cisco amended its complaint on June 1, 2020. *See* FAC. On June 15, 2020, Capella filed an answer and counterclaim alleging infringement going back to at least 2014, six years prior to the reissuance of the '905 and '906 Patents. *See* Docket No. 29 ("Countercl.") ¶ 26.

On August 21, 2020, the Court granted Cisco's motion for judgment on the pleadings. *See* Docket No. 48 (Order Granting Pls.' Mot. for J. on the Pleadings ("MJOP Order")). The Court held that in light of the PTAB's invalidation of certain claims in the '368 and '678 Patents (the "Original Patents") Capella was precluded from recovering for Cisco's alleged infringement of "substantially identical" claims in the '905 and '906 Patents (the "Reissued Patents"), and that to the extent claims of the reissued patents were not substantially identical, Capella could not recover preissuance damages. *Id.* at 5, 11. On December 8, 2020, this Court denied Capella's motion to certify the Court's order granting Cisco's motion for judgment on the pleadings for interlocutory appeal pursuant to 18 U.S.C. § 1292(b). *See* Docket No. 81. On February 9, 2021, the Court also denied Capella's motion for reconsideration. *See* Docket No. 100.

On March 9, 2021, Cisco again moved for judgment on the pleadings and to dismiss *any* claim for pre-issuance damages. *See* Docket No. 107. That motion was heard on April 22, 2021.

III. LEGAL STANDARDS

A. Ordinary Meaning and Claim Construction

Claim construction is a question of law, although it may have factual underpinnings. *See Multilayer Stretch Cling Film Holdings, Inc. v. Berry Plastics Corp.*, 831 F.3d 1350, 1357 (Fed. Cir. 2016). The process "serves to define the scope of the patented invention and the patentee's right to exclude." *HTC Corp. v. Cellular Commc'ns Equip., LLC*, 877 F.3d 1361, 1367 (Fed. Cir. 2017); *see also O2 Micro Int'l Ld. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008) ("The purpose of claim construction is 'to determin[e] the meaning and scope of the patent

claims asserted to be infringed”) (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996)).

Claim construction follows longstanding principles of interpretation in patent law. First, “the claims of a patent define the invention.” *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004). The words of a claim are generally given their “ordinary and customary meaning,” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).¹ Such a person “read[s] the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* at 1313.

“In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words.” *Id.* at 1314. At other times, claim language requires more active interpretation, especially since “patentees frequently use terms idiosyncratically.” *Id.* In such situations, the court looks to “those sources [of information] available to the public that show what a person of skill in the art would have understood disputed claim language to mean,” such as “the words of the claims themselves, the . . . specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Id.* (quoting *Innova*, 381 F.3d at 1116).

Courts first look to intrinsic evidence, as “the claims themselves provide substantial guidance as to the[ir] meaning.” *Id.* The “context in which a term is used in the asserted claim,” “[o]ther claims of the patent in question, both asserted and unasserted,” and “[d]ifferences among claims” are all instructive. *Id.* The claims must also “be read in view of the specification,” which is “the single best guide to the meaning of a disputed term” and often “dispositive.” *Id.* at 1315.

Courts “normally do not interpret claim terms in a way that excludes disclosed examples in

¹ “The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation.” *Phillips*, 415 F.3d at 1313.

the specification.” *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1305 (Fed. Cir. 2007). At the same time, generally “limitations from the specification are not to be read into the claims.” *Comark Commc’ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). This is because “the purposes of the specification are to teach and enable those of skill in the art to make and use the invention and to provide a best mode for doing so.” *Phillips*, 415 F.3d at 1323. Further, the effect and force of the specification may vary. “[U]pon reading the specification in . . . context, it will [often] become clear whether the patentee is setting out specific examples of the invention to accomplish [its] goals, or whether the patentee instead intends for the claims and the embodiments in the specifications to be strictly coextensive.” *Id.*

In addition to consulting the specification, “the court should also consider the patent’s prosecution history,” which is another form of intrinsic evidence. *See Markman*, 52 F.3d at 980 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 33 (1966)). However, because the “prosecution history represents an ongoing negotiation between the [Patent and Trademark Office] and the applicant,” it “often lacks the clarity of the specification” and is therefore “less useful” for purposes of claim construction. *Phillips*, 415 F.3d at 1317.

Though intrinsic evidence—the claims, specification, and prosecution history—has primacy at claim construction, courts may also consider the extrinsic record, including expert and inventor testimony, dictionaries, and learned treatises. *See id.* at 1317–18. Technical dictionaries in particular “can assist the court in determining the meaning of particular terminology to those of skill in the art,” as they “endeavor to collect the accepted meanings of terms used in various fields of science and technology.” *Id.* at 1318. And expert testimony can “provide background on the technology at issue,” helping “to explain how an invention works, to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.” *Id.* “[C]onclusory, unsupported assertions,” however, are not helpful, nor should the Court accept expert testimony “that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history.” *Id.* (quoting *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998)).

B. Means-Plus-Function Claim Construction Under 35 U.S.C. § 112(f)

Under 35 U.S.C. § 112(f), a patentee may express a claim in terms of “means or step[s] for performing a specified function *without* the recital of structure, material, or acts in support thereof.” 35 U.S.C. § 112(f) (emphasis added). Such means-plus-function claims must “be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” *Id.* The Federal Circuit has explained that § 112(f) “allow[s] patentees to express a claim limitation by reciting *a function to be performed* rather than by reciting structure for performing that function, while placing specific constraints on how such a limitation is to be construed, namely, by restricting the scope of coverage to only the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347 (Fed. Cir. 2015) (en banc) (emphasis added).

The court must first determine whether the limitation in question is a means-plus-function term subject to § 112(f). *See id.* at 1348; *see also Phillips*, 415 F.3d at 1311 (“Means-plus-function claiming applies *only* to purely functional limitations that do not provide the structure that performs the recited function.” (emphasis added)). Generally, the use of the term “means” creates a presumption that § 112(f) applies. *Williamson*, 792 F.3d at 1349. Conversely, the absence of the term “means” creates the opposite presumption. *Id.* A party may overcome either presumption by showing that the claims recite (or do not recite) a “sufficiently definite structure” to adequately perform the claimed function. *Id.* In other words, §112(f) applies only if “the claim term ‘fails to recite[] a sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’” *Id.* at 1348 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)).

If means-plus-function applies, the court engages in a two-step inquiry to construe the claim. First, “[t]he court must identify the claimed function,” and second, “the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function.” *Id.* at 1351. A structure corresponds to the claimed function if “the specification or prosecution history clearly links or associate[s] that structure to the function recited in the

claim.” *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1311 (Fed. Cir. 2012) (quoting *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)). The structure must be adequate to perform the function; if the intrinsic evidence fails to disclose adequate corresponding structure, the claim is indefinite. *Id.* at 1311–12.

C. Definiteness Under 35 U.S.C. §112(b)

Indefiniteness is a question of law “that is drawn from the court’s performance of its duty as the construer of patent claims.” *Eon Corp IP Holdings LLC v. Aruba Networks Inc.*, 62 F. Supp. 3d 942, 948–49 (N.D. Cal. 2014) (quoting *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1378 (Fed. Cir. 1999)). Pursuant to 35 U.S.C. § 112(b), a patent must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” 35 U.S.C. § 112(b). A claim term is indefinite “if its claims, read in light of the patent’s specification and prosecution history, fail to inform, with *reasonable certainty*, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 898–99, 908 (2014) (emphasis added) (“[D]efiniteness is to be evaluated from the perspective of someone skilled in the relevant art.”); *see also One-E-Way, Inc. v. Int’l Trade Comm’n*, 859 F.3d 1059, 1064 (Fed. Cir. 2017) (reviewing entire specification).

The indefiniteness test “mandates clarity, while recognizing that absolute precision is unattainable.” *Nautilus*, 572 U.S. at 899; *see also BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017) (“‘Reasonable certainty’ does not require ‘absolute or mathematical precision.’” (quoting *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1381 (Fed. Cir. 2015))). “It cannot be sufficient that a court can ascribe some meaning to a patent’s claim; the definiteness inquiry trains on the understanding of a skilled artisan at the time of the patent application, not that of a court viewing matters post hoc.” *Nautilus*, 572 U.S. at 899. Finally, the defendant must prove indefiniteness by clear and convincing evidence. *See Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

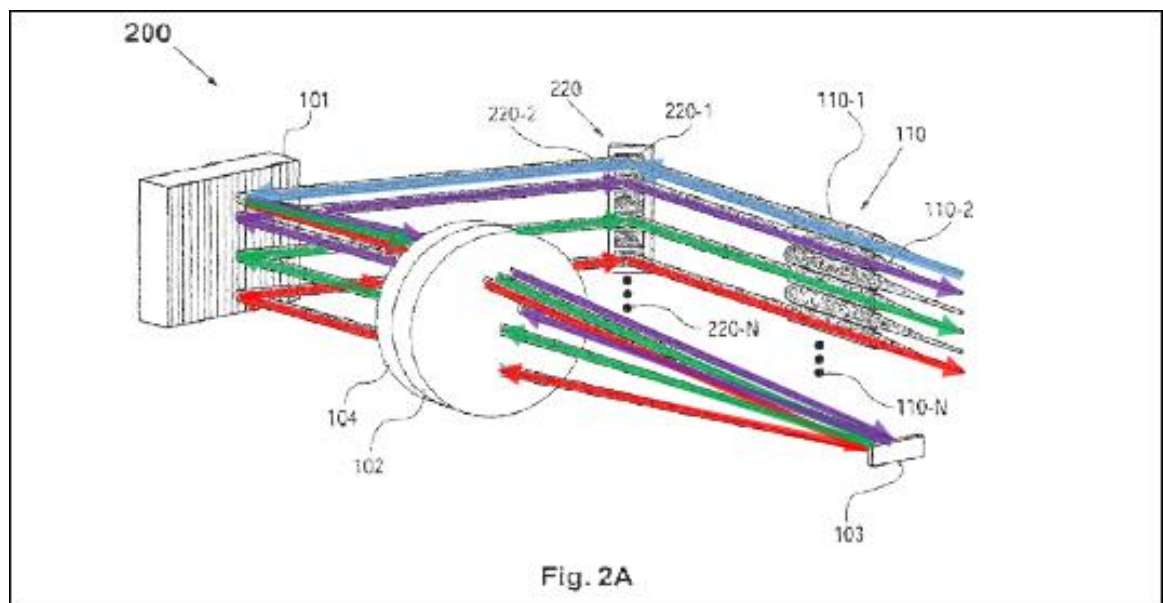
IV. DISCUSSION

A. The Technology

The Reissued Patents share a substantially identical abstract and specification, even though

their claims are different. *See Capella Photonics, Inc. v. Fujitsu Network Commc'ns, Inc.*, Case No. 2:20-cv-00076, Docket No. 81 (E.D. Tex. filed March 16, 2020) and *Capella Photonics, Inc. v. Infinera Corp. et al.*, Case No. 2:20-cv-00077, Docket No. 99 (E.D. Tex. filed March 17, 2020) (the "Tex. Claim Construction Order") at 4. Therefore, for purposes of simplicity, this order cites to the '905 Patent with the understanding that the cited material is also in the '906 Patent, unless otherwise stated.

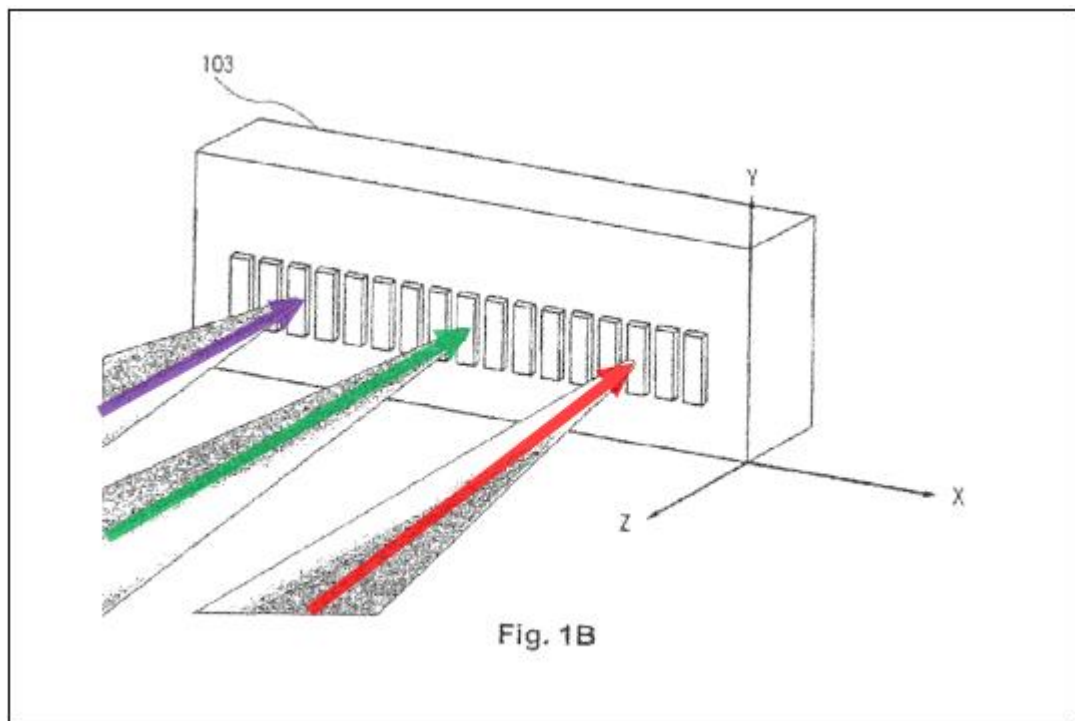
The Reissued Patents describe a technology, known as wavelength-separating-routing (WSR), that allows for wavelength-division multiplexing (WDM) in optical communication systems. *See* Docket No. 97-2 ("905 Patent") at Abstract. Figure 2A of the Reissued Patents is an exemplary embodiment of a WSR apparatus:



Id. at fig. 2A. WSR includes an input port (110-1), a number of output ports (110-2 through 110-N), a one-dimensional array of collimator alignment mirrors that correspond to the ports (array 220, mirrors 220-1 through 220-N), a wavelength separating diffraction grating (101), a quarter-wave plate (104), a beam focusing lens (102), and an array of channel micromirrors (103). *Id.* An optical signal (in blue) enters through the input port, reflects off the collimator-alignment mirror that corresponds to the input port (220-1 through 220-N), and is incident upon the diffraction grating (101). *Id.* The diffraction grating (101) spatially separates the optical signal into various

wavelengths (in red, green, violet), each forming a spectral channel. *Id.* The various spectral channels are separately focused (via the beam-focusing lens (102)) on the array of channel micromirrors (103) such that each channel micromirror receives one of the spectral channels. *Id.* Each separated spectral channel is reflected back through the lens (102), diffraction grating (101), and a collimator-alignment mirror (220-1 through 220-N) and out through the corresponding output port (110-2 through 110-N). *Id.* at col. 6 l. 59–col. 7 l. 29, col. 9 l. 57–col. 10 l. 10).

Figure 1B of the patent is an exemplary embodiment of the channel micromirrors (103):



Id. at fig. 1. As depicted, the reflective surface of each channel micromirror lies in an x-y plane and the micromirrors are arranged such that each micromirror receives one of the focused, spatially separated, spectral channels (in red, green, violet). *Id.* The micromirrors are movable such that the spectral channels reflected off the micromirrors may be directed to one of the output ports. *Id.* For example, the micromirrors may be independently pivotable about the x-axis, enabling controlled deflection of the corresponding spectral channel in the y-axis. *Id.* at col. 8 ll. 22–37.

The abstracts of the Reissued Patents are almost identical. The '905 Patent provides:

This invention provides a novel wavelength-separating-routing (WSR) apparatus that uses a diffraction grating to separate a multi-wavelength optical signal by wavelength into multiple spectral channels, which are then focused onto an array of corresponding channel micromirrors. The channel micromirrors are individually controllable and continuously pivotable to reflect the spectral channels into selected output ports. As such, the inventive WSR apparatus is capable of routing the spectral channels on a channel-by-channel basis and coupling any spectral channel into any one of the output ports. The WSR apparatus of the present invention may be further equipped with servo-control and spectral power-management capabilities, thereby maintaining the coupling efficiencies of the spectral channels into the output ports at desired values. The WSR apparatus of the present invention can be used to construct a novel class of dynamically reconfigurable optical add-drop multiplexers (OADMs) for WDM optical networking applications.”

See id. at Abstract (emphasis added). The only difference in the ‘906 Patent’s abstract is the word “channels” (emphasized above) is replaced with “characters.” *See* Docket No. 97-3 (“906 Patent”) at Abstract.

The Honorable Rodney Gilstrap of the U.S. District Court for the Eastern District of Texas recently construed these patents in two actions currently before him: (1) *Capella Photonics, Inc. v. Fujitsu Network Communications, Inc.*, Case No. 2:20-cv-00076 (E.D. Tex. filed March 16, 2020); and (2) *Capella Photonics, Inc. v. Infinera Corporation et al.*, Case No. 2:20-cv-00077 (E.D. Tex. filed March 17, 2020) (the “Texas Actions”). In *Markman*, the Supreme Court recognized that treating claim construction as a matter of law would “promote (though it will not guarantee) intrajurisdictional certainty through the application of *stare decisis* on those questions not yet subject to interjurisdictional uniformity under the authority of the single appeals court.” 517 U.S. at 391; *see also Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (“Given ‘the importance of uniformity in the treatment of a given patent,’ . . . this court consults the claim analysis of different district courts on the identical terms in the context of the same patent.” (quoting *Markman*, 517 U.S. at 390)); *Key Pharms. v. Hercon Lab’ys. Corp.*, 161 F.3d 709, 716 (Fed.Cir.1998) (“We do not take our task lightly in this regard, as we recognize the national *stare decisis* effect that this court’s decisions on claim construction have.”). In other words, the Supreme Court “made a distinction between *intra*jurisdictional uniformity and *inter*jurisdictional uniformity,” such that, assuming the Federal Circuit has not construed the terms

of a patent, district courts are to give more deference (*stare decisis* deference) to prior constructions from courts inside their district than to prior constructions from courts outside their district. *Visto Corp. v. Sproqit Techs., Inc.*, 445 F. Supp. 2d 1104, 1108 (N.D. Cal. 2006) (emphases added) (“[T]he Court concludes that it will take into consideration Judge Ward’s claim construction order as, per *Markman*, uniformity in claim construction is important. However, because Judge Ward’s order is outside of this jurisdiction, this Court has discretion in determining the degree of deference accorded his order.”). Here, because Judge Gilstrap sits in the Eastern District of Texas, his claim construction order “is entitled to ‘reasoned deference,’ with such deference turning on the persuasiveness of the order; ‘in the end, [however, the Court] will render its own independent claim construction.’” *Visto*, 445 F. Supp. 2d at 1108–09 (quoting *Innovations, L.P. v. Intel Corp.*, No. 2:04–CV–450, 2006 WL 1751779, at *4, 2006 U.S. Dist. LEXIS 41453, at *13 (E.D. Tex. June 21, 2006)); *see also Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 2003 WL 21911241, at *3, 2003 U.S. Dist. LEXIS 13900, at *8–9 (N.D. Ill. Aug. 8, 2003) (stating that, even though claim construction order from outside the jurisdiction was “persuasive,” at times, the court might “not agree with that court and *Markman* . . . is not to the contrary”). As discussed below, the Court finds much of Judge Gillstrap’s claims construction persuasive.

B. Claims Construction

The parties asked the Court to construe eleven (11) claim terms:

| No. | Claim Term | Claims | Capella’s Proposal | Cisco’s Proposal |
|-----|---|---|---|---------------------------------------|
| 1 | “port(s)”/“fiber collimators . . . providing . . . port(s)” | ’905 Patent, Claims 1, 15, 16; ’906 Patent, Claims 1, 21, 31, 37, 44, 61; | Fiber collimator port(s) Fiber collimators providing and serving as port(s). | N/A |
| 2 | “Port(s)” | ’368 Patent, Claims 1, 5, 6, 10, 15, 16; ’678 Patent, Claims 1-3, 5, 20- 22, 24, 31, 37-39, 44-47, 55, 60-63; ’905 Patent, Claims 23, 28, 39, 45, 47, 49, 51; | N/A | “the point of entry or exit of light” |

| | | | | |
|---|--|--|---|--|
| | | '906 Patent, Claims 100, 115, 116-118, 133; | | |
| 3 | "fiber collimator port(s)"/"fiber collimator . . . port(s)" | '905 Patent, Claims 23, 27, 32,39; '906 Patent, Claims 68-70, 72, 80, 87, 89, 90, 92, 100, 115, 118, 126, 131, 133; | N/A | "fiber collimator port excluding circulator ports that is the point of entry or exit of light" |
| 4 | "Fiber collimator(s), providing . . . port(s)" | '678 Patent, Claims 1, 21, 31, 44, 55; | N/A | "fiber collimators that can be coupled to other components to make available a point of entry or exit of light" |
| 5 | "fiber collimator(s), providing and serving as...port(s)"/"fiber collimator(s) serving as...port(s)" | '905 Patent, Claims 23, 47, 49, 51 '906 Patent, Claims 68, 100, 115, 126 | N/A | "fiber collimators that by themselves provide the point of entry or exit of light without a circulator" |
| 6 | "beam-deflecting elements" | '905 Patent, Claims 23, 47, 49, 51, 52; '906 Patent, Claims 68, 100, 115, 133; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, deflective parts, including but not limited to mirrored or reflective parts, of a beam deflector. Further, Capella specifically disagrees that construction under 35 U.S.C. §112(f)(6) is appropriate. | Subject to § 112(6) Structure: silicon micromachined mirrors or reflective ribbons (or membranes) Function: deflecting a beam In the alternative, indefinite. |
| 7 | "micromirror(s)" | '905 Patent, Claims 23-25, 27-28, 31, 35, 46, 47, 49, 51-54; '906 Patent, Claims 133-134, 139; | Mirrored or reflective surfaces for reflecting light. One of ordinary skill in the art would understand "micromirrors" and "micromachined mirrors" to mean small mirrored or reflective surfaces for reflecting light. A "channel micromirror," in light of the specifications and claims, means a small mirror or reflective surfaces that are positioned to receive | "a single reflective MEMS element that can be physically moved to reflect light at different angles" |

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|----|---|--|---|--|
| | | | one of the spectral channels. | |
| 8 | “continuously controllable” / “controlling . . . continuously” / “continuously controlling” | ’905 Patent, Claim 46; ’906 Patent, Claims 68-70, 79, 82, 85, 89-90, 96, 100, 115-117, 122-123, 125-127, 129; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, continuously controllable means capable of constant or uninterrupted control. | “under analog control such that it can be continuously adjusted, i.e., not in step-wise fashion” |
| 9 | “controllable in two dimensions”/“controlling . . . in two dimensions” | ’905 Patent, Claims 23, 47, 49, 51; ’906 Patent, Claim 133; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, dimension means a direction or quality. <i>See above</i> for controllable. | “capable of being physically moved in two dimensions” |
| 10 | “being pivotal about two axes” | ’906 Patent, Claims 68, 115; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, capable of rotation about two axes. | “capable of being physically moved around two axes” |
| 11 | “controlling dynamically”/ “dynamically . . . controlling” | ’905 Patent, Claims 51, 52; ’906 Patent, Claim 133; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, controlling in response to change, activity, or progress. | plain meaning, in contrast to static |

Joint Claim Construction Statement, Appendix A.

Terms one (1) through five (5) relate to disputes regarding claim amendments between the Original Patents (the ’368 and ’678 Patents) and the Reissued Patents (the ’905 and ’906 Patents). *Id.* at 2. The parties disagree on how these terms should be presented to the Court: Capella

proposes the Court only construe term one (1), whereas Cisco asks the Court to construe terms two (2) through five (5) instead. *Id.* at 1.

The parties also disagree as to whether any construction will be case or claim dispositive. Capella does not believe that any construction is case or claim dispositive. *Id.* at 3. By contrast, Cisco believes that the Court’s construction of terms (1) through (5) will determine whether collateral estoppel applies or whether Capella is precluded from pursuing pre-issuance damages. *Id.* Cisco also contends that the Court’s construction of term six (6) will determine whether *all* of its products infringe the Reissued Patents, and that the Court’s construction of terms (7) through (10) will determine whether a *class* of its products infringe the Reissued Patents. *Id.*

This order will first address terms one (1) through five (5) as a group before addressing terms six (6) through (11) individually.

1. Terms one (1) through five (5): “port(s);” “fiber collimator port” or “fiber collimator . . . port;” “Fiber collimator(s), providing . . . port(s);” and “fiber collimator(s), providing and serving as port(s)” or “fiber collimator(s) serving as . . . port(s)”²

| No. | Claim Term | Claims | Capella’s Proposal | Cisco’s Proposal |
|-----|---|---|--|---------------------------------------|
| 1 | “Port(s)”/“fiber collimators . . . providing . . . port(s)” | <p>’905 Patent, Claims 1, 15, 16;</p> <p>’906 Patent, Claims 1, 21, 31, 37, 44, 61;</p> | <p>Fiber collimator port(s)</p> <p>Fiber collimators providing and serving as port(s).</p> | N/A |
| 2 | “Port(s)” | <p>’368 Patent, Claims 1, 5, 6, 10, 15, 16;</p> <p>’678 Patent, Claims 1-3, 5, 20- 22, 24, 31, 37-39, 44-47, 55, 60-63;</p> <p>’905 Patent, Claims 23, 28, 39, 45, 47, 49, 51;</p> <p>’906 Patent, Claims 100, 115, 116-118, 133;</p> | N/A | “the point of entry or exit of light” |

² The chart below shows Capella’s proposed construction in **bold** and Cisco’s proposed constructions in *italics*.

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|---|---|---|-----|--|
| 3 | <i>“fiber collimator port(s)”/“fiber collimator . . . port(s)”³</i> | <i>’905 Patent, Claims 23, 27, 32, 39; ’906 Patent, Claims 68-70, 72, 80, 87, 89, 90, 92, 100, 115, 118, 126, 131, 133;</i> | N/A | <i>“fiber collimator port excluding circulator ports that is the point of entry or exit of light”</i> |
| 4 | <i>“Fiber collimator(s), providing . . . port(s)”</i> | <i>’678 Patent, Claims 1, 21, 31, 44, 55;</i> | N/A | <i>“fiber collimators that can be coupled to other components to make available a point of entry or exit of light”</i> |
| 5 | <i>“fiber collimator(s), providing and serving as...port(s)”/“fiber collimator(s) serving as...port(s)”</i> | <i>’905 Patent, Claims 23, 47, 49, 51 ’906 Patent, Claims 68, 100, 115, 126</i> | N/A | <i>“fiber collimators that by themselves provide the point of entry or exit of light without a circulator”</i> |

The parties fundamentally disagree on (1) whether the term “port” in the Reissued Patents is limited to “fiber collimator port;” (2) whether a fiber collimator that is “providing” a port means that the port is necessarily a fiber collimator port; and (3) whether Capella defined the term “port” to mean “fiber collimated port,” or disclaimed all ports other than fiber collimated ports. This order will address each of these disputes in turn.

a. The term “port” is not limited to “fiber collimator port”

The ordinary and customary meaning of the term “port” in an optical setting is “point of entry or exit of light.” *See* ’368 IPR Order at 12 (quoting Docket No. 106-18 (Transcript of Videotaped Deposition of Alexander V. Sergienko, Ph.D. (“Sergienko Dep. Tr.”)) at 43:16–23); ’678 IPR Order at 14 (same). Even Capella’s expert, Dr. Sergienko, recognized as much during the IPR proceedings that invalidated the Original Patents. *See* Sergienko Dep. Tr. at 43:21–23 (“The port is point of entry or exit of light when it relates to telecommunication fabric.”). The question, therefore, is whether the intrinsic record—the specification, claims, or prosecution history—supports Capella’s argument that it intended to depart from this ordinary and customary

³ Ellipses in this section replace the bolded words in the following permutations of the disputed terms: “fiber collimator **input** port(s),” “fiber collimator **add** port,” “fiber collimator **drop** port,” “fiber collimator **other** port(s),” “fiber collimator **one or more other** ports,” and “fiber collimator **output** port.”

meaning, such that the term “port” in the Reissued Patents is limited to “fiber collimator port.”⁴ *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (“The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history.”).

Capella relies heavily on the “summary” in the Reissued Patents’ specification to argue that the term “port” is synonymous with “fiber collimator port”:

The present invention provides a wavelength-separating-routing (WSR) apparatus and method which employ an array *of fiber collimators* serving as an input port and a plurality of output ports; a wavelength-separator; a beam focuser; and an array of channel micromirrors.

’905 Patent col. 3 l.66–col. 4 l. 3 (emphasis added). As Judge Gilstrap noted in his claim construction order, read in a vacuum this summary does appear to limit the term “port” in the Reissued Patents to fiber collimator ports. Tex. Claim Construction Order at 22.

Other parts of the intrinsic record, however, support finding that the ports of the invention described by the Reissued Patents are not limited to fiber collimator ports. *Id.* at 22–24. First, the Reissued Patents’ prosecution history strongly suggests that the term “port” does not necessarily mean “fiber collimator port.” Indeed, the provisional application on which the Original and Reissued Patents rely for priority described an embodiment with circulator ports. *See* Docket No. 106-21 (“Provisional Appl.”) at 3 (“Three different OADM architectures disclosed in the present invention are shown in Figures 7–9”) & Figure 9; ’368 IPR Order at 14 and ’678 IPR Order at 16 (“Petitioner further demonstrates that a provisional application to the [Original Patents] in fact uses circulator ports as ‘ports.’”). Furthermore, in invalidating the Original Patents, the PTAB

⁴ Cisco argues that Capella is collaterally estopped from arguing that it defined the term “port” in the Original Patents to mean “fiber collimator ports” because it made the same argument before the PTAB and the Federal Circuit in the IPR proceedings of the Original Patents, and lost. *See* Docket No. 106 (“Resp. Br.”) at 8–9. But the Court is not estopped from construing these terms again because the PTAB applied the broadest-reasonable-interpretation (BRI) standard to construe these terms, whereas this Court is required to apply the “correct” *Phillips* standard. *See SkyHawke Techs., LLC v. Deca Int’l Corp.*, 828 F.3d 1373, 1376 (Fed. Cir. 2016) (“Because the Board applies the broadest reasonable construction of the claims while the district courts apply a different standard of claim construction as explored in [*Phillips*], the issue of claim construction under *Phillips* to be determined by the district court has not been actually litigated [for purposes of issue preclusion].”).

unequivocally recognized “[t]here is no dispute that the ordinary and customary meaning of ‘port’ encompasses circulator ports, and, indeed, any ‘point of entry or exit of light.’” ’368 IPR Order at 12 and ’678 IPR Order at 14 (quoting Sergienko Dep. Tr. at 43:16–23). After considering the testimony of Dr. Sergienko, the PTAB concluded that “even if certain fiber collimators serve as ports in the [Original Patents], that does not redefine the term ‘port’ to mean ‘collimator.’” ’368 IPR Order at 12–13 and ’678 IPR Order at 15. In other words, the Original Patents did not “disavow[] circulator ports from the scope of the term ‘port.’” ’368 IPR Order at 13 and ’678 IPR Order at 15.

In fact, as Judge Gilstrap noted in his claim construction order, *see* Tex. Claim Construction Order at 22–23, the cancelled claims of the Original Patents make it clear that the invention could have fiber collimators that exist separate and apart from the input/output ports:

1. An optical add-drop apparatus comprising

an ***input port for an input multi-wavelength optical signal*** having first spectral channels; ***one or more other ports*** for second spectral channels; an ***output port for an output multi-wavelength optical signal***; a wavelength-selective device for spatially separating said spectral channels;

a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels, each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said ports and to control the power of the spectral channel reflected to said selected port.

’905 Patent at col. 14 ll. 29–43 (emphases added).

7. The optical add-drop apparatus of claim 1 further comprising alignment mirrors for adjusting alignment of said input and output multi-wavelength optical signals and said second spectral channels with said wavelength-selective device.

8. The optical add-drop apparatus of claim 7 ***further comprising collimators associated with said alignment mirrors, and imaging lenses*** in a telecentric arrangement with said alignment mirrors and ***said collimators***.

Id. at col. 14 l. 66–col. 15 l. 3 (emphasis added). If the ports in Claim 1 were fiber collimator ports, then there would be no reason to conceive of an apparatus “further comprising collimators” in Claim 8. This idea of separate fiber collimators is consistent with one of the preferred

embodiments in the specification of both the Original and the Reissued Patents:

The WSR apparatus of the present invention may further comprise an array of collimator-alignment mirrors, in optical communication with the wavelength separator *and the fiber collimators*, for adjusting the alignment of the input multiwavelength signal and directing the spectral channels into the selected *output ports* by way of angular control of the collimated beams. Each collimator-alignment mirror may be rotatable about one or two axes. The collimator-alignment mirrors may be arranged in a one-dimensional or two-dimensional array. First and second arrays of imaging lenses may additionally be optically interposed between the collimator-alignment mirrors *and the fiber collimators* in a telecentric arrangement, thereby “imaging” the collimator-alignment mirrors onto the *corresponding fiber collimators* to ensure an optimal alignment.

Id. at col. 4 ll. 42–56 (emphasis added). This Court agrees with the Texas Claim Construction Order that this this embodiment makes clear the Original and the Reissued Patents contemplate fiber collimators in the invention that operate separately from the output ports. *See* Tex. Claim Construction Order at 23–24

Second, and most importantly, a plain reading of the claims and the specification of the Reissued Patents reveals that the terms “port” and “fiber collimator port” are not synonymous because they are used throughout the Reissued Patents to refer to different parts of the invention. *Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1382 (Fed. Cir. 2008) (“Our precedent instructs that different claim terms are presumed to have different meanings.”); *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n. 3 (Fed. Cir. 2006) (“[T]he use of two terms in a claim requires that they connote different meanings.”); *CAE Screenplates Inc. v. Heinrich Fiedler GmbH*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.”).⁵ For example, as Judge Gilstrap noted in his claim construction order, Claim 23 of the ’905 patent uses the term “fiber collimator” to refer to the “input port” and “one or more other

⁵ In fact, Capella was precluded from amending every instance of “port” to “fiber collimator port” during the reissue proceedings because the PTAB determined that type of amendment lacked support in the specification. *See* Docket No. 106-26 (“Prelim. Amendment”) at 13 (“Applicant respectfully disagrees [with the examiner’s rejection of the proposed amendments as “not supported by the prior patent”], but in order to advance prosecution, Applicant has amended the claims to remove the limitation of the fiber collimators serving as output ports.”).

ports for second spectral channels,” but uses only the term “port” to refer to the “output port:”

23. An optical add-drop apparatus comprising *an output port* and *fiber collimators serving as an input port and one or more other ports*, the apparatus comprising:

the *fiber collimator input port* for an input multi-wavelength optical signal having first spectral channels;

the *fiber collimator one or more other ports* for second spectral channels;

the *output port* for an output multi-wavelength optical signal;

a wavelength-selective device for spatially separating said spectral channels;

a spatial array of beam-deflecting elements positioned such that each element receives a corresponding one of said spectral channels, each of said elements being individually and continuously controllable in two dimensions to reflect its corresponding spectral channel to a selected one of said *output port* or the *fiber collimator ports* and to control the power of the spectral channel reflected to said *output port* or the *fiber collimator selected port*.

Id. at col. 16 ll. 38–58 (emphases added). If all the invention’s ports had to be fiber collimator ports, then the “output port” in Claim 23 should have also been recited as a fiber collimator port. There would be no need to use differential language in describing a “fiber collimator input port” from the “output port.” See *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed. Cir. 2003) (“[W]e presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning.”).

More fundamentally, the inclusion of words “fiber collimator” to qualify “input port” suggests “port” cannot be synonymous with “fiber collimator port” because that would render superfluous the use of the term “fiber collimator” in Claim 23. *SimpleAir, Inc. v. Sony Ericsson Mobile Commc’ns AB*, 820 F.3d 419, 429 (Fed. Cir. 2016) (“[I]nterpretations that render some portion of the claim language superfluous are disfavored.” (quoting *Power Mosfet Techs., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1410 (Fed. Cir. 2004))); *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”).

Finally, the “detailed description” of Figure 1 in the specification explains that “the WSR

apparatus 100 comprises multiple input/output ports ***which may be*** in the form of an array of fiber collimators 110, providing an input port 110-1 and a plurality of output ports 110-2 through 110-N.” ’905 Patent col. 7 ll. 4–7 (emphasis added). The permissive term in the specification again indicates the input and output ports in the invention can be, but are not necessarily, fiber collimator ports.

Accordingly, the term “port” does not mean “fiber collimator port” in the patents.

b. A fiber collimator that is “providing” a port is not necessarily a fiber collimator port

The plain and ordinary meaning of the verb “provide” is “to supply or make available.” *Provide*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/provide> (last visited March 29, 2021). Capella has failed support with intrinsic evidence its contention that the Reissued Patents use the term “providing” to mean “serving as.” *See Thorner*, 669 F.3d at 1365. Indeed, as Judge Gilstrap observed in his claim construction order, “[Capella] has not identified any intrinsic evidence that establishes ‘providing’ should be narrowly interpreted as ‘serving as.’” Tex. Claim Construction Order at 25. To the contrary, he correctly noted that the Reissued Patents use the term “providing” according to its plain and ordinary meaning in other contexts, *see, e.g.*, ’905 Patent at col. 11 ll. 15–22 (“[A] WSR apparatus of the present invention may incorporate a servo-control assembly, for ***providing*** dynamic control of the coupling of the spectral channels into the respective output ports” (emphasis added)), suggesting that it should also be given its customary and ordinary meaning in the context of ports, *see Helmsderfer*, 527 F.3d at 1382 (“[W]e decline to construe the term ‘partially hidden from view’ to have the same meaning as ‘generally hidden from view’ or ‘at least partially hidden from view’” because “Borcar used the term ‘generally’ and ‘at least’ elsewhere in claim 1”).

“Providing” in ordinary parlance means “to make available,” a conclusion supported by the fact that Capella replaced the phrase “providing” in the claims of the ’678 Patent with the phrase “providing *and serving as*” or simply “*serving as*” in the claims of the ’905 and ’906 Patents (the word “providing” did not appear on its own in the claims of the ’386 Patent). *Compare* ’906 Patent at col. 14 l. 43, col. 16 l. 2, col. 16 l. 56, col. 18 l. 18, col. 19 l. 14, *with id.* at col. 20 l. 16,

col. 22 l. 44, col. 24 l. 11, col. 25 l. 910, *and* '905 Patent at col. 4 l. 39, col. 18 l. 21, col. 18 l. 48, col. 20 l. 6. Simply put, if “providing” always meant “serving as,” as Capella contends, then Capella would have had no need to clarify in the claims of the Reissued Patents that the fiber collimators were “serving as” ports.

Accordingly, the use of the word “providing” in the patents does not mean “serving as.”

c. Capella did not define the term “port” to mean “fiber collimator port,” nor did it disavow the full scope of the term “port”

Capella also argues that it acted as its own lexicographer to redefine “port” as “fiber collimator port,” and disavowed all ports other than fiber collimator ports, through statements it made during the IPR proceedings that invalidated the Original Patents. *See* Docket No. 97 (“Opening Br.”) at 16–17. This argument is based on the rule that the words of a claim are generally given their ordinary and customary meaning unless one of two exceptions applies: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner*, 669 F.3d at 1365.

There is no dispute that Capella’s filings in the IPR proceedings of the Original Patents attempted to disavow circulator ports from the definition of ports in the Original Patents. *See e.g.*, Docket No. 97-14 (“Capella’s Resp. to ’368 IPR Pet.”) at 7 (“The ’368 Patent explicitly labels the ports ‘collimators’ and says throughout the specification that collimators serve as the ports. The ports in the ’368 Patent are **not** circulator ports.”); *id.* at 31–32 (“In addition to the combination of embodiments of Bouevitch and the combination of Bouevitch and Smith being non-obvious, the Board should uphold patentability because Bouevitch’s circulators cannot meet the claimed ports, *i.e.*, collimators.”). But these statements cannot constitute a “definition” of the term “port” in the Reissued Patents simply because they are not incorporated into the Reissued Patents. For Capella “[t]o act as its own lexicographer,” it had to “‘clearly set forth a definition of the disputed claim term’ other than its plain and ordinary meaning,” in “the [Reissued Patents’] *written description of the invention.*” *Thorner*, 669 F.3d at 1365–66 (emphasis added) (first quoting *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); then quoting *C.R. Bard, Inc. v. U.S.*

Surgical Corp., 388 F.3d 858, 862 (Fed. Cir. 2004)). Capella did not act as its own lexicographer because it did not clearly and explicitly define that term in the Reissued Parents. *See e.g.*, *Thorner*, 669 F.3d at 1368 (refusing to narrow the definition of attachment even though “the patentee used the term when referencing an attachment to an outer surface in each embodiment” because the exception “require[s] a clear and explicit statement by the patentee”); *3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1369 (Fed. Cir. 2004) (patentee acted as its own lexicographer when the specification explicitly stated: “‘Multiple embossed’ *means* two or more embossing patterns are superimposed on the web to create a complex pattern of differing depths of embossing” (emphasis added)); *Astrazeneca AB v. Mutual Pharm. Co.*, 384 F.3d 1333, 1339 (Fed. Cir. 2004) (patentee acted as its own lexicographer when the specification explicitly stated: “[t]he solubilizers suitable according to the invention *are defined below*” (emphasis added)). Nowhere in the Reissued Patents’ specification does Capella clearly state that the term “port” is defined as “fiber collimator port.” To the contrary, as noted above, the specification states that the ports “*may be*” fiber collimators. ’905 Patent col. 7 ll. 4–7 (emphasis added).

Similarly, Capella’s statements in the Original Patents’ IPR proceedings constitute, at best, a disavowal of *circulator ports*, not a disavowal of *all* ports *other than* fiber collimator ports. A particular “feature is deemed to be outside the reach of the patent” only “[w]here the specification makes clear that the invention does not include [that] feature.” *Thorner*, 669 F.3d at 1368 (quoting *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys, Inc.*, 242 F.3d 1337, 1341 (Fed. Cir. 2001)). “The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.” *Id.* (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002)); *see also Home Diagnostics, Inc. v. LifeScan, Inc.*, 381 F.3d 1352, 1358 (Fed. Cir. 2004) (“Absent a clear disavowal in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language.”). Here, Capella’s statements during the IPR proceedings that “[t]he ports in the ’368 Patent are **not** *circulator ports*” does not state that the ports have to be fiber collimator ports. Capella’s Resp. to ’368 IPR Pet. at 7 (second emphasis added). For Capella to disavow all ports other than fiber

collimator ports it would have had to clearly and unequivocally said as much in the specification or during the prosecution history. It did not.

Accordingly, the Court rejects Capella’s proposed construction of term one (1) altogether and construes terms two (2) through five (5) as follows:

- Term two (2): “port” means “point of entry or exit of light, excluding circulator ports”
- Term three (3): “fiber collimator port” or “fiber collimator . . . port” means “fiber collimator port that is the point of entry or exit of light”
- Term four (4): “fiber collimator, *providing* . . . port” means “fiber collimator that can be coupled to other components to make available a point of entry or exit of light”
- Term five (5): “fiber collimator(s), *providing and serving as* . . . port(s)” or “fiber collimator(s) *serving as* . . . port(s)” means “fiber collimator port that is the point of entry or exit of light”

2. Term six (6): “beam-deflecting elements”

| No. | Claim Term | Claims | Capella’s Proposal | Cisco’s Proposal |
|-----|----------------------------|--|---|--|
| 6 | “beam-deflecting elements” | <p>’905 Patent, Claims 23, 47, 49, 51, 52;</p> <p>’906 Patent, Claims 68, 100, 115, 133;</p> | <p>Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, deflective parts, including but not limited to mirrored or reflective parts, of a beam deflector.</p> <p>Further, Capella specifically disagrees that construction under 35 U.S.C. §112(f)(6) is appropriate.</p> | <p>Subject to § 112(6):</p> <p>Structure: silicon micromachined mirrors or reflective ribbons (or membranes)</p> <p>Function: deflecting a beam</p> <p>In the alternative, indefinite.</p> |

Before construing the term “beam-deflecting elements,” the Court must decide whether it is a means-plus-function term subject to the strictures of § 112(f). Here, because the phrase

“beam-deflecting elements” does not use the term “means,” there is a presumption that it is not a means-plus-function term. *Williamson*, 792 F.3d at 1348. Cisco can overcome this presumption by demonstrating that “the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function.” *Id.* at 1349 (quoting *Watts*, 232 F.3d at 880); *see also Samsung Elecs. Am., Inc. v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1354 (Fed. Cir. 2020) (“The question whether [a term] invokes section 112, paragraph 6, depends on whether persons skilled in the art would understand the claim language to refer to structure, assessed in light of the presumption that flows from the drafter’s choice not to employ the word ‘means.’”); *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1008 (Fed. Cir. 2018) (“[T]he mere fact that the disputed limitations incorporate functional language does not automatically convert the words into means for performing such functions.”).

As Judge Gilstrap explained in his claim construction order, the record establishes that the term “beam-deflecting elements” refers to a class of sufficiently known structures and therefore does not invoke § 112(f). *See* Tex. Claim Construction Order at 33. For example, the Reissued Patents provide that “[t]he channel micromirrors may be provided by silicon micromachined mirrors, reflective ribbons (or membranes), or *other types of beam-deflecting elements* known in the art.” ’905 Patent at col.9 ll. 22–25 (emphasis added); *see also* ’905 Patent at col. 11 ll. 10–14 (“For these reasons, the collimator-alignment mirrors are preferably rotatable about two axes. They may be silicon micromachined mirrors, for fast rotational speeds. They may also be *other types of mirrors or beam-deflecting elements* known in the art.”). In other words, “beam-deflecting elements” is an umbrella term referring to a class of known structures that includes, but is not limited to, silicon micromachined mirrors, reflective ribbons, and reflective membranes. It is not governed by § 112(f). *See Personalized Media Commc’ns., L.L.C. v. ITC*, 161 F.3d 696, 705 (Fed. Cir. 1998) (“Even though the term ‘detector’ does not specifically evoke a particular structure, it does convey to one knowledgeable in the art a variety of structures known as ‘detectors.’ We therefore conclude that the term ‘detector’ is a sufficiently definite structural term to preclude the application of § 112, P 6.”). Moreover, the term “beam-deflecting elements” is not indefinite because “the written description of the specification is sufficient to inform one skilled in

the art of the meaning of the [term].” *Id.* at 705.

As Judge Gilstrap correctly noted in his claim construction order, the term “beam-deflecting elements” should have its plain and ordinary meaning without the need for further construction. Tex. Claim Construction Order at 34.

3. Term seven (7): “micromirrors”

| No. | Claim Term | Claims | Capella’s Proposal | Cisco’s Proposal |
|-----|------------------|--|--|---|
| 7 | “micromirror(s)” | <p>’905 Patent, Claims 23-25, 27-28, 31, 35, 46, 47, 49, 51-54;</p> <p>’906 Patent, Claims 133-134, 139;</p> | <p>Mirrored or reflective surfaces for reflecting light. One of ordinary skill in the art would understand “micromirrors” and “micromachined mirrors” to mean small mirrored or reflective surfaces for reflecting light. A “channel micromirror,” in light of the specifications and claims, means a small mirror or reflective surfaces that are positioned to receive one of the spectral channels.</p> | <p>“a single reflective MEMS element that can be physically moved to reflect light at different angles”</p> |

In the Texas Actions, the parties attempted to group the terms “mirrors,” “micromirrors,” “micromachined mirrors,” and “channel micromirrors” under one definition. Judge Gilstrap rejected that grouping, correctly noting that not all mirrors in the claims of the Reissued patents are “channel micromirrors.” See TX Claim Construction Order at 59–60. For example, the Reissued Patents also teach that the invention uses “collimator-alignment mirrors” that are distinct and operate separately from the “channel micromirrors.” See ’905 Patent at fig. 2A and col. 9 l. 57–col. 10 l. 11. Therefore, Judge Gilstrap concluded that the terms “mirrors,” “micromirrors,” and “micromachined mirrors” have their plain and ordinary meanings without the need for further construction, and that the term “channel micromirror” means “movable micromirror assigned to a specific spectral channel.” *Id.* at 61.

Here, by contrast, the parties are asking the Court to construe only the term “micromirrors.” *See* Joint Claim Construction Statement at 27–32. Like Judge Gilstrap, the Court concludes that the term “micromirror” has its plain and ordinary meaning, without the need for further construction. The parties do not offer any compelling intrinsic or extrinsic evidence to deviate from this definition.

4. Term eight (8): “continuously controllable;” “controlling . . . continuously;” and “continuously controlling”

| No. | Claim Term | Claims | Capella’s Proposal | Cisco’s Proposal |
|-----|---|--|---|--|
| 8 | “continuously controllable” / “controlling . . . continuously” / “continuously controlling” | ’905 Patent, Claim 46; ’906 Patent, Claims 68-70, 79, 82, 85, 89-90, 96, 100, 115-117, 122-123, 125-127, 129; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, continuously controllable means capable of constant or uninterrupted control. | “under analog control such that it can be continuously adjusted, i.e., not in step-wise fashion” |

The parties’ proposed constructions of the term “continuously controlling” are fairly similar except that Cisco’s proposed construction requires excluding “step-wise” control and specifying that “continuous control” is necessarily “analog control.” Judge Gilstrap rejected these parts of Cisco’s proposed construction because the Reissued Patents’ specification teaches “that continuous control entails analog control of the element position *but* explains this analog nature as a continuous adjustability of the element *rather than as a specific type of control signal.*” Tex Claim Construction Order at 39 (emphasis added). Although this is certainly true, there is ample support in the record to conclude that analog (or continuous) control necessarily means *not* step-wise control.

As an initial matter, and as Judge Gilstrap noted, the Reissued Patents’ specification clearly equates “continuous” control with “analog” control:

The channel micromirrors 103 are individually controllable and movable, e.g., pivotable (or rotatable) under ***analog (or continuous) control***, such that, upon reflection, the spectral channels are directed

into selected ones of the output ports 110-2 through 110-N by way of the focusing lens 102 and the diffraction grating 101.

'905 Patent at col. 7 ll. 20–25 (emphasis added); *see also id.* at col. 8 ll. 30–33 (“Let the reflective surface of each channel micromirror lie in the x-y plane as defined in the figure and be movable, e.g., pivotable (or deflectable) about the x-axis in an ***analog (or continuous)*** manner.”). In other words, the terms “analog” and “continuous” are synonymous in the Reissued Patents.

Admittedly, the term “step-wise” does not appear in the Reissued Patents. Instead the specification defines analog (or continuous) control as the ability to continuously adjust the beam-reflecting element:

A distinct feature of the channel micromirrors in the present invention, in contrast to those used in the prior art, is that the motion, e.g., pivoting (or rotation), of each channel micromirror is ***under analog control such that its pivoting angle can be continuously adjusted***. This enables each channel micromirror to scan its corresponding spectral channel across all possible output ports and thereby direct the spectral channel to any desired output port.

Id. at col. 4 ll. 19–26 (emphasis added); *see also, id.* at col. 9 ll.26–31 (“What is important is that the pivoting (or rotational) motion of each channel micromirror be ***individually controllable in an analog manner***, whereby the pivoting angle can be ***continuously adjusted*** so as to enable the channel micromirror to scan a spectral channel across all possible output ports.” (emphases added)). Although the specification does not explicitly disavow step-wise control, and does not specify the type of signal that must be applied, it does require that the pivoting angle must be “continuously adjusted.” Step-wise control is the opposite of continuous adjustment is thus implicitly excluded.

Consistent with the specification, Capella expressly distinguished the “analog control” used in the Reissued Patents from the “step-wise digital control” used in the prior art during the IPR proceedings on the Original Patents:

Petitioner first says Smith teaches continuous control because Smith teaches analog control. But Smith, along with several other patent applications and patents in the Smith family, indicates that ***the Smith mirror operates under step-wise digital control (i.e., not analog control)***.

See Docket No. 106-24 (“Capella’s Resp. to ’368 IPR Pet.”) at 7 (emphasis added). Capella

further argued:

Smith discloses tilting mirrors at both large and small angles. (*See* Smith, 18:12-14 (“Tilting about the major axis can be performed both at the large angles corresponding to the positions of the mirrors and at finer angular resolution within the large angles.”).) Also, Smith says that the control is preferably performed by pulse width modulation (“PWM”). (*See id.* at 11:22-23.) A POSA would view tilting according to large angles and small angles and PWM *more akin to step-wise digital control than analog control*. (Sergienko Dec., ¶ 176.)

Id. at 44–45 (emphasis added). Capella’s expert explained that, in his view, “digital controlled mirrors can be tilted to a limited number of positions (i.e., the control is not continuous but rather step-wise) [and that a]nalog controlled mirrors operate under continuous control.” *See* Docket No. 106-22 (Decl. of Dr. Alexander V. Sergienko in Support of the Patent Owner Resp. (“Sergienko Decl.”)) ¶ 43.

Accordingly, the Court construes the different permutations of term 8 as follows:

- “continuously controllable” means “controllable such that [it/they] can be continuously adjusted, i.e. not in step-wise fashion”
- “controlling . . . continuously” means “controlling . . . such that [it/they] can be continuously adjusted, i.e., not in step-wise fashion”
- “continuously controlling” means “controlling such that [it/they] can be continuously adjusted, i.e., not in step-wise fashion.”

5. Term nine (9): “controllable in two dimensions” or “controlling . . . in two dimensions”

| No. | Claim Term | Claims | Capella’s Proposal | Cisco’s Proposal |
|-----|--|--|---|---|
| 9 | “ <i>controllable in two dimensions</i> ”/“ <i>controlling...in two dimensions</i> ” | ’905 Patent, Claims 23, 47, 49, 51; ’906 Patent, Claim 133; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, dimension means a direction or quality . <i>See above</i> for controllable. | “ <i>capable of being physically moved</i> in two dimensions” |

The parties proposed constructions tackle different parts of the term “controllable in two dimensions.” Capella focuses entirely on construing the term “dimension” to mean “direction or quality.” Cisco’s proposed construction, by contrast, ignores the term “dimension” and focuses entirely on construing the term “controllable” to mean “capable of being physically moved.”⁶ Neither of these constructions has any merit in light of the intrinsic evidence. This section will address each proposed construction in turn.

As Judge Gilstrap noted in his claim construction order, *see* Tex. Claim Construction Order at 36, the Reissued Patents’ specification repeatedly states that “controllable” and “movable” are separate concepts, *see, e.g.*, ’905 Patent at col. 4 ll. 11–14 (“The channel micromirrors are individually controllable **and** movable.”) (emphasis added); *id.* at col. 7 ll. 21–22 (“The channel micromirrors 103 are individually controllable **and** movable.” (emphasis added)). Nowhere in the Reissued Patents does Capella define “controllable” to mean “moveable.” If that were the case, the specification’s use of one of the two terms would necessarily be superfluous. Put a different way, construing “controllable” to mean “moveable” or “capable of being physically moved” would be inconsistent with the specification. *See Phillips*, 415 F.3d at 1316 (“In light of the statutory directive that the inventor provide a “full” and “exact” description of the claimed invention, the specification necessarily informs the proper construction of the claims.”); *Merck & Co. v. Teva Pharms. USA, Inc.*, 347 F.3d 1367, 1371 (Fed. Cir. 2003) (“A fundamental rule of claim construction is that terms in a patent document are construed with the meaning with which they are presented in the patent document. Thus, claims must be construed so as to be consistent with the specification, of which they are a part.”). Therefore, control does not mean “to physically move.”

Similarly, the plain meaning of the word “dimension” applicable to the Reissued Patents is “*measure in one direction*” or “*the quality of spatial extension.*” *Dimension*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/dimension> (last visited March 31, 2021) (emphasis added). Indeed, the term “dimension” is always used in the Reissued Patents to connote a *spatial*

⁶ This chart shows what Capella is focused on in **bold** and what Cisco is focused on in *italics*.

arrangement. *See, e.g.*, '905 Patent col. 7 ll. 59–63 (“The corresponding spectral channels diffracted from the diffraction grating 101 are generally elliptical in cross-section; they may be of the same size as the input beam in one dimension and elongated in the other dimension.”), col. 8 ll. 23–26 (“By way of example, the channel micromirrors 103 are arranged in a one-dimensional array along the x-axis (i.e., the horizontal direction in the figure”), col. 9 ll. 38–40 (“The fiber collimators serving as the input and output ports may be arranged in a one-dimensional array, a two-dimensional array, or other desired *spatial pattern*.” (emphasis added)). Nothing in the Reissued Patents supports concluding that Capella intended to use that term more broadly to mean “quality” instead of the spatial sense of the word.⁷

Accordingly, the Court construes the different permutations of term 9 as follows:

- “controllable in two dimensions” means “controllable in two spatial dimensions”
- “controlling . . . in two dimensions” means “controlling . . . in two spatial dimensions.”

6. Term ten (10): “being pivotal about two axes”

The parties’ agree that the term “being pivotal about two axes,” which only appears in the ‘906 Patent, refers to movement of the channel micromirrors. *See* ‘906 Patent at col. 20 ll. 26–27 (“said channel micromirrors being pivotal about two axis”); *id.* at col. 24 ll. 22–23 (same). The only dispute is whether “pivotal” broadly means that the channel micromirrors can be “physically moved” (Cisco’s construction), or more narrowly means that they can only be “rotated” (Capella’s construction).

The ordinary and customary meaning of the verb “to pivot” is “turning on or as if on a pivot,” *i.e.*, rotating. *Pivot*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/pivot> (last visited Apr. 27, 2021). This is consistent with the specification, which repeatedly equates the terms “pivoting/pivotable” to “rotation/rotational/rotatable.” ‘906 Patent at col. 4, ll. 28–32 (“A distinct feature of the channel micromirrors in the preset invention, in contrast to those used in the

⁷ The term “dimension” has other meanings that are clearly inapplicable here, such as “a lifelike or realistic quality,” “the range over which or the degree to which something extends,” “one of the elements or factors making up a complete personality or entity,” and even “a level of existence or consciousness.” *See Dimension*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/dimension> (last visited March 31, 2021).

prior art, is that the motion, e.g., **pivoting (or rotation)**, of each channel micromirror is under analog control.” (emphasis added)); *id.* at col. 7 ll. 32–34 (“The channel micromirrors 102 are individually controllable and moveable, e.g., **pivotable (or rotatable)** under analog (or continuous) control.” (emphasis added)); *id.* at col. 9 ll 40–43 (“What is important is that the **pivoting (or rotational)** motion of each channel micromirror be individually controllable in an analog manner” (emphasis added)).

Accordingly, the court construes the term “being pivotal about two axes” to mean “being capable of rotating about two axes.”

7. Term eleven (11): “controlling dynamically;” “dynamically . . . controlling”

| No. | Claim Term | Claims | Capella’s Proposal | Cisco’s Proposal |
|-----|---|---|---|--------------------------------------|
| 11 | “controlling dynamically”/ “dynamically... controlling” | ’905 Patent, Claims 51, 52; ’906 Patent, Claim 133; | Capella asserts that this term needs no construction. Plain and ordinary meaning or, if there is disagreement, controlling in response to change, activity, or progress. | plain meaning, in contrast to static |

The parties essentially agree that the term “dynamically” should be given its plain meaning, which is “marked by usually continuous and productive activity or change.” *Dynamic*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/dynamically> (last visited March 31, 2021). Cisco argues that, in addition to adopting this term’s plain and ordinary meaning, the Court should construe it in opposition to “static.” There is support for construing “dynamically” in opposition to “static” in the specification. *See e.g.*, ’905 Patent at col. 3 ll. 33–36 (“[T]he prevailing drawbacks suffered by the OADMs currently in the art . . . [include t]he wavelength routing is intrinsically **static**, rendering it 35 difficult to **dynamically reconfigure** these OADMs.”) (emphasis added). Moreover, the PTAB concluded during the IPR proceedings that invalidated the Original Patents that, based on the specification, “the ’368 patent uses ‘dynamically’ in contrast to ‘static,’ in accordance with its ordinary and customary meaning.” ’368 IPR Order at 16 (emphasis added). This construction is persuasive.

Accordingly, the Court construes the term “dynamically controlling” or “controlling . . . dynamically” to mean “controlling in a way marked by usually continuous and productive activity or change, in contrast to static.”

V. CONCLUSION

For the foregoing reasons, the Court construes the contested claim terms as follows:


- Term two (2): “port” means “point of entry or exit of light, excluding circulator ports”
- Term three (3): “fiber collimator port” or “fiber collimator . . . port” means “fiber collimator port that is the point of entry or exit of light”
- Term four (4): “fiber collimator, *providing* . . . port” means “fiber collimator that can be coupled to other components to make available a point of entry or exit of light”
- Term five (5): “fiber collimator(s), *providing and serving as* . . . port(s)” or “fiber collimator(s) *serving as* . . . port(s)” means “fiber collimator port that is the point of entry or exit of light”
- Term six (6): “beam-deflecting elements” has its plain and ordinary meaning without the need for further construction.
- Term seven (7): “micromirror” has its plain and ordinary meaning without the need for further construction.
- Term eight (8):
 - “continuously controllable” means “controllable such that [it/they] can be continuously adjusted, i.e. not in step-wise fashion”
 - “controlling . . . continuously” means “controlling [it/they] such that they can be continuously adjusted, i.e. not in step-wise fashion”
 - “continuously controlling” means “controlling such that [it/they] can be continuously adjusted, i.e. not in step-wise fashion”
- Term nine (9):
 - “controllable in two dimensions” means “controllable in two spatial dimensions”
 - “controlling . . . in two dimensions” means “controlling . . . in two spatial dimensions”

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- Term ten (10): “being pivotal about two axes” means “being capable of rotating about two axes”
- Term eleven (11): “dynamically controlling” or “controlling . . . dynamically” means “controlling in a way marked by usually continuous and productive activity or change, in contrast to static”

IT IS SO ORDERED.

Dated: April 29, 2021



EDWARD M. CHEN
United States District Judge